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(51) INT CL<sup>6</sup>

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US 4832361 A

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INT CL<sup>6</sup> B62B 7/06 7/08

Online: EDOC,WPI

(54) Abstract Title

**Collapsible pushchair/stroller with one-hand release latch**

(57) The pushchair 100 (Fig.1) includes a rotary moving member 114 (Fig.1) incorporated into a handle portion 106 (Fig.1) of a frame 102 (Fig.1). The moving member is connected to wires 206,208 (Fig.3A) that extend through a tube 204 (Fig.3A) to slidable latches 112 (Fig.1). The moving member includes two half shells 302,320 (Fig.3A) mounted via grooves 310,312,322,324 (Fig.3A) which engage pins 330,332 (Fig.3A) which protrude out of grooves 340,342 (Fig.3A) formed in the tube. In use, the moving member is rotated by an operator, such that the grooves slide the pins axially along the length of the shaft, i.e. rotational motion is converted into linear axial motion. When the pin moves along the axial length of the tube, the pins pull the wires along with them. The motion and force of the wire is used to release the latches 112 and collapse the stroller. The moving member may be constructed in a one-piece form (Fig.3B). To prevent inadvertent rotation of the moving portion and collapse of the stroller, a rotation lock (1000, Fig.10) may be used. The lock includes a resiliently biased nose portion (1002, Fig.10) formed on the moving member which cooperates with a recess (1006, Fig.10) on the lip (1020, Fig.10) of an end cap (350, Fig.10).

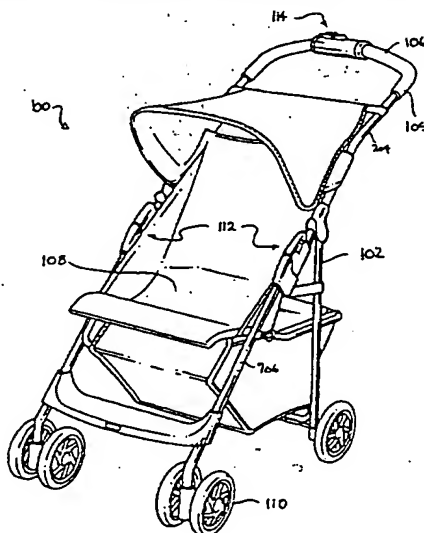


Fig. 1

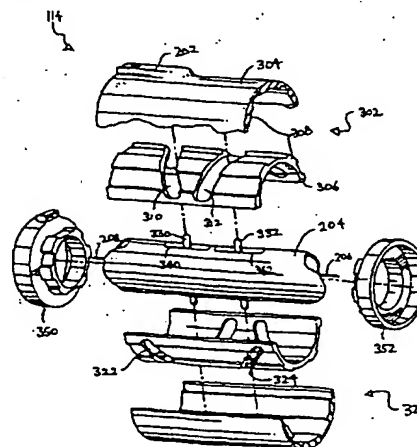
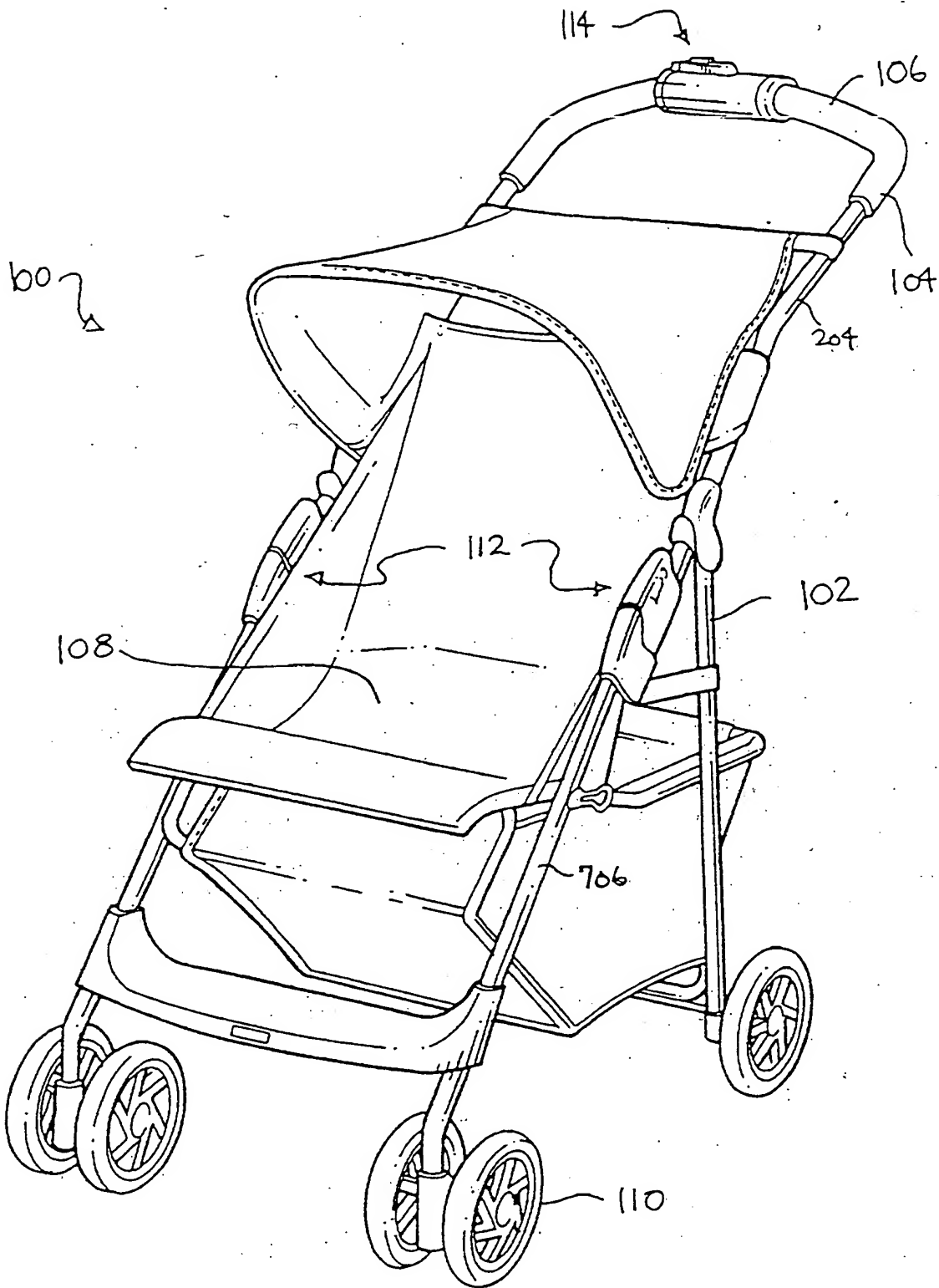


Fig. 3A

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114

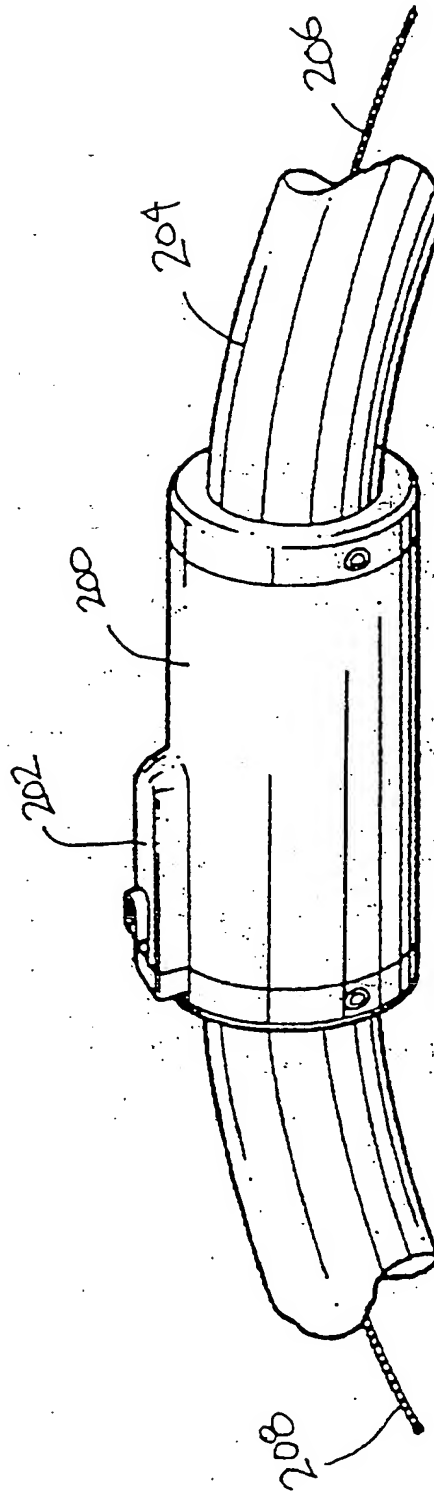


FIG. 2

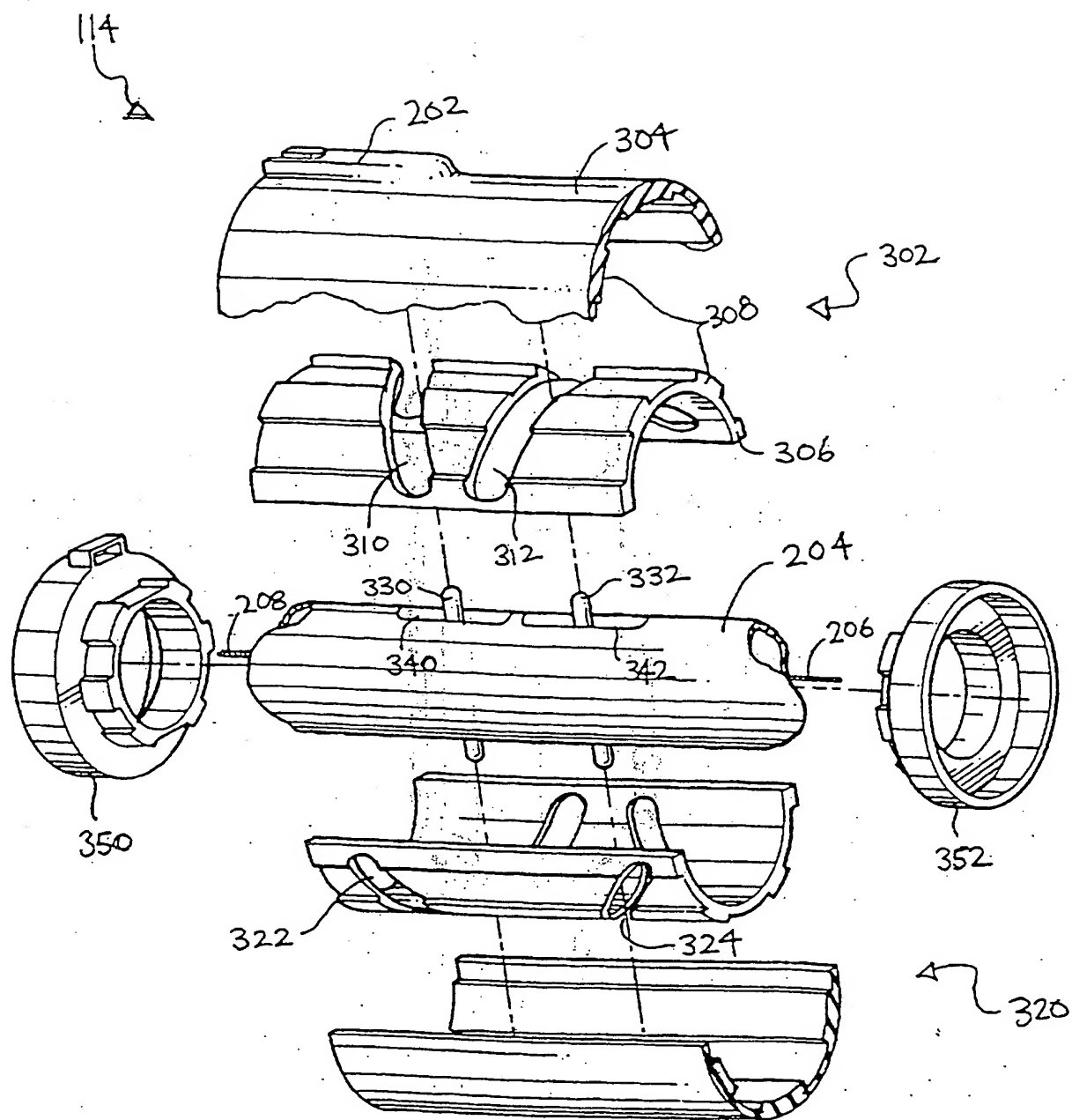


FIG. 3A

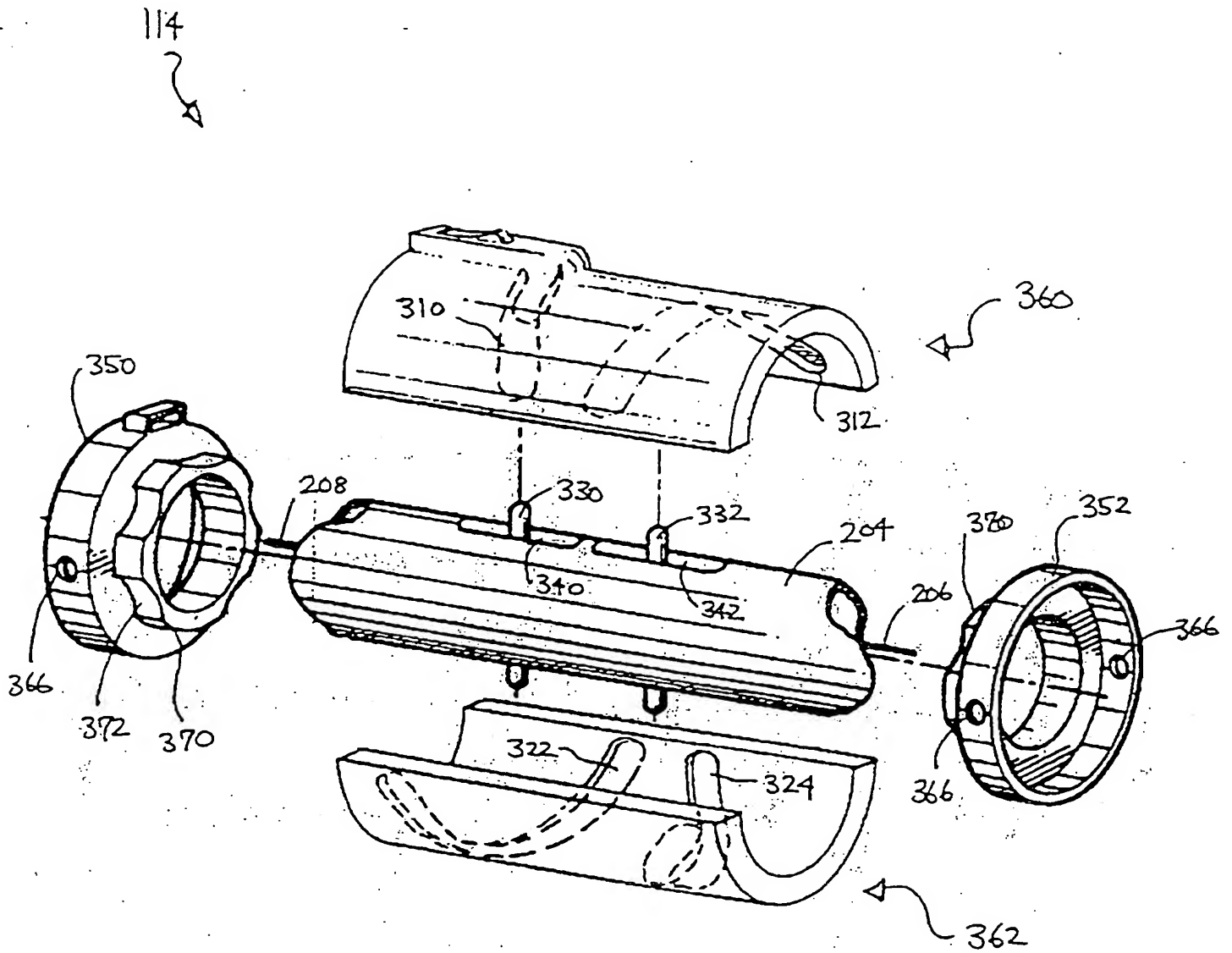


FIG. 3B

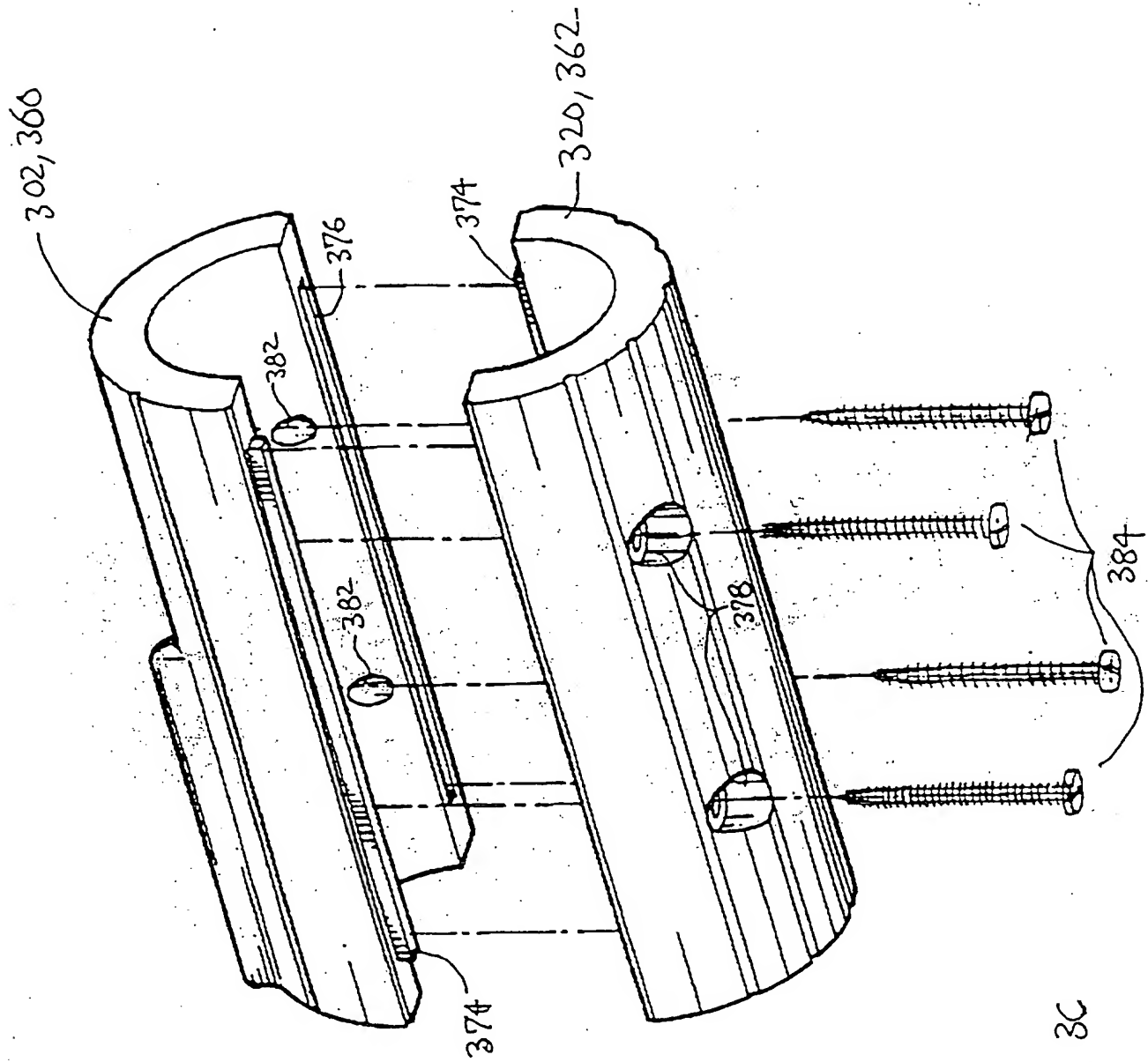


Fig. 3C





FIG. 4

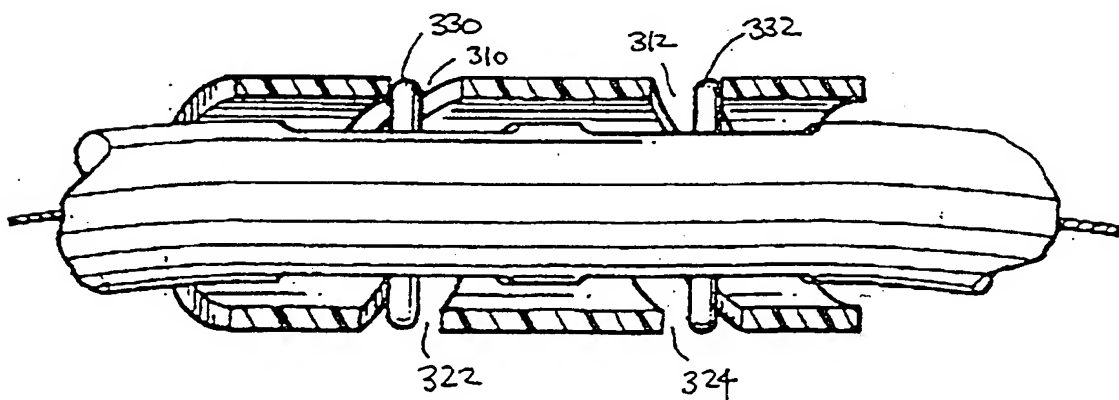
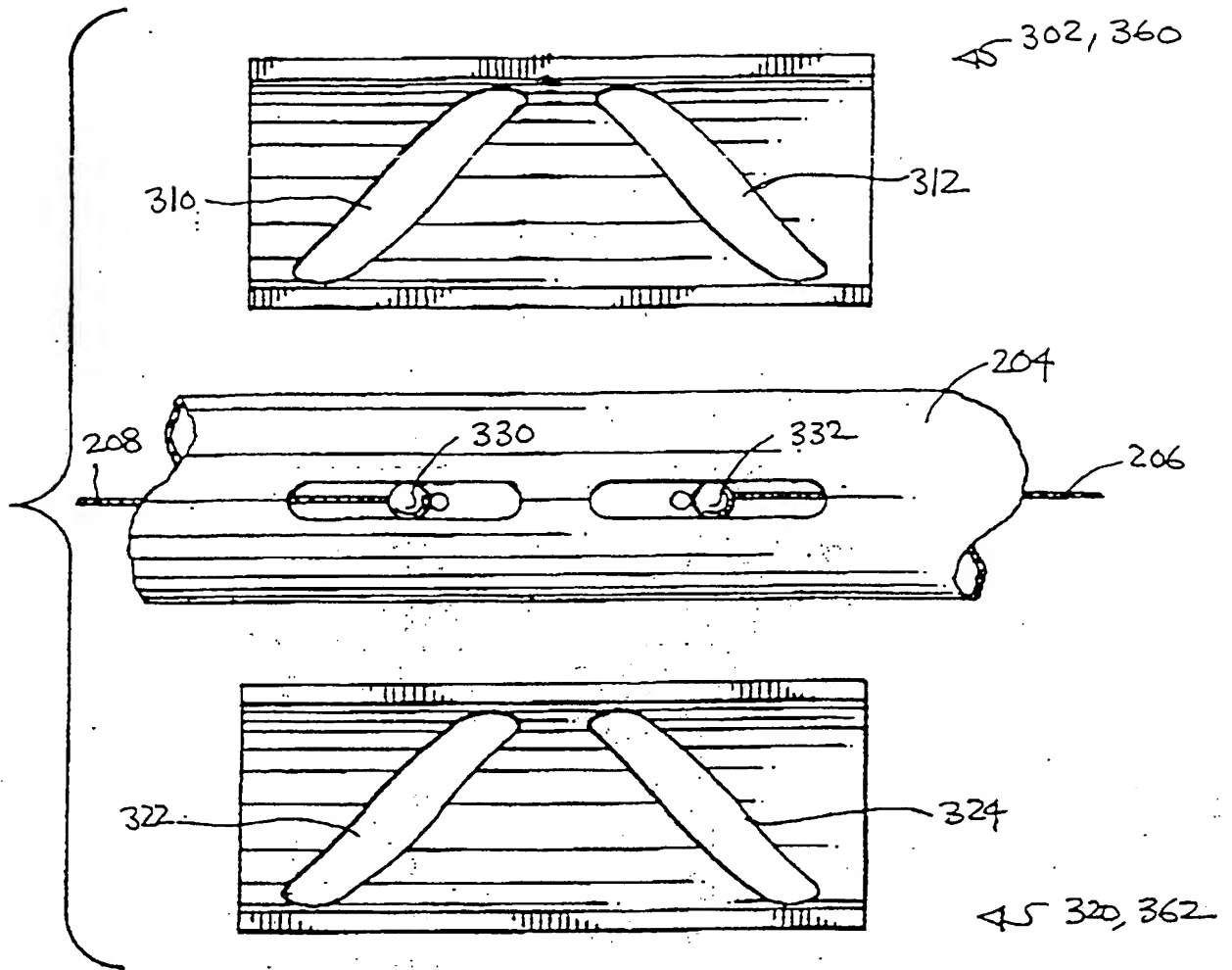


FIG. 5

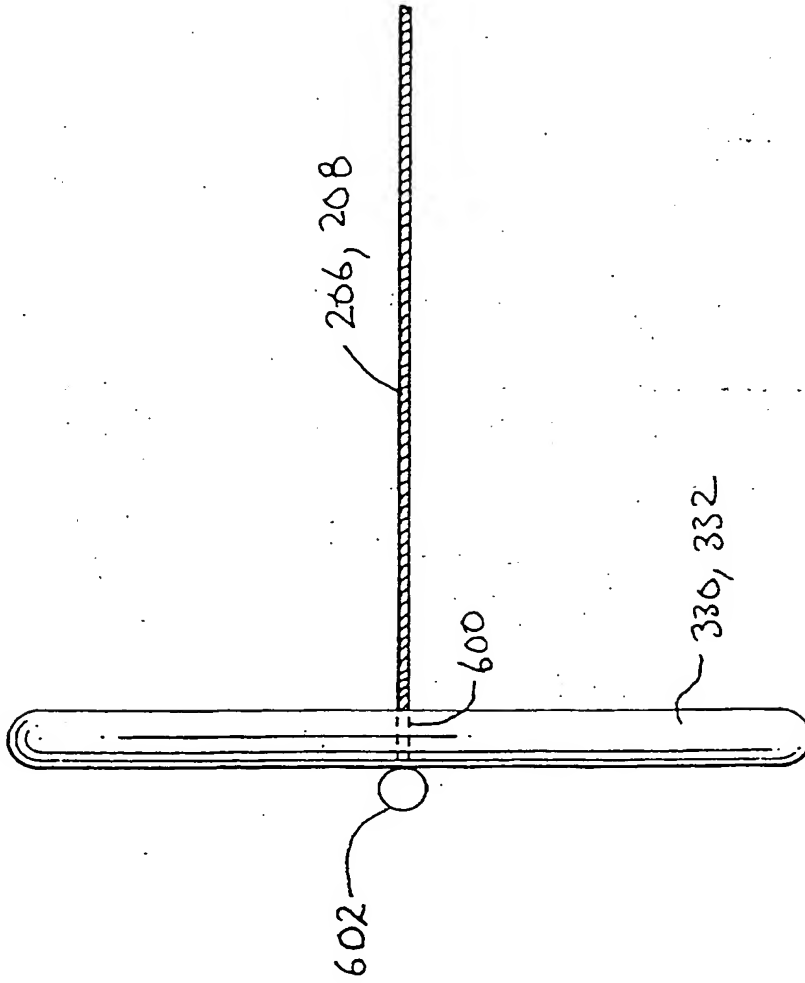


FIG. 6

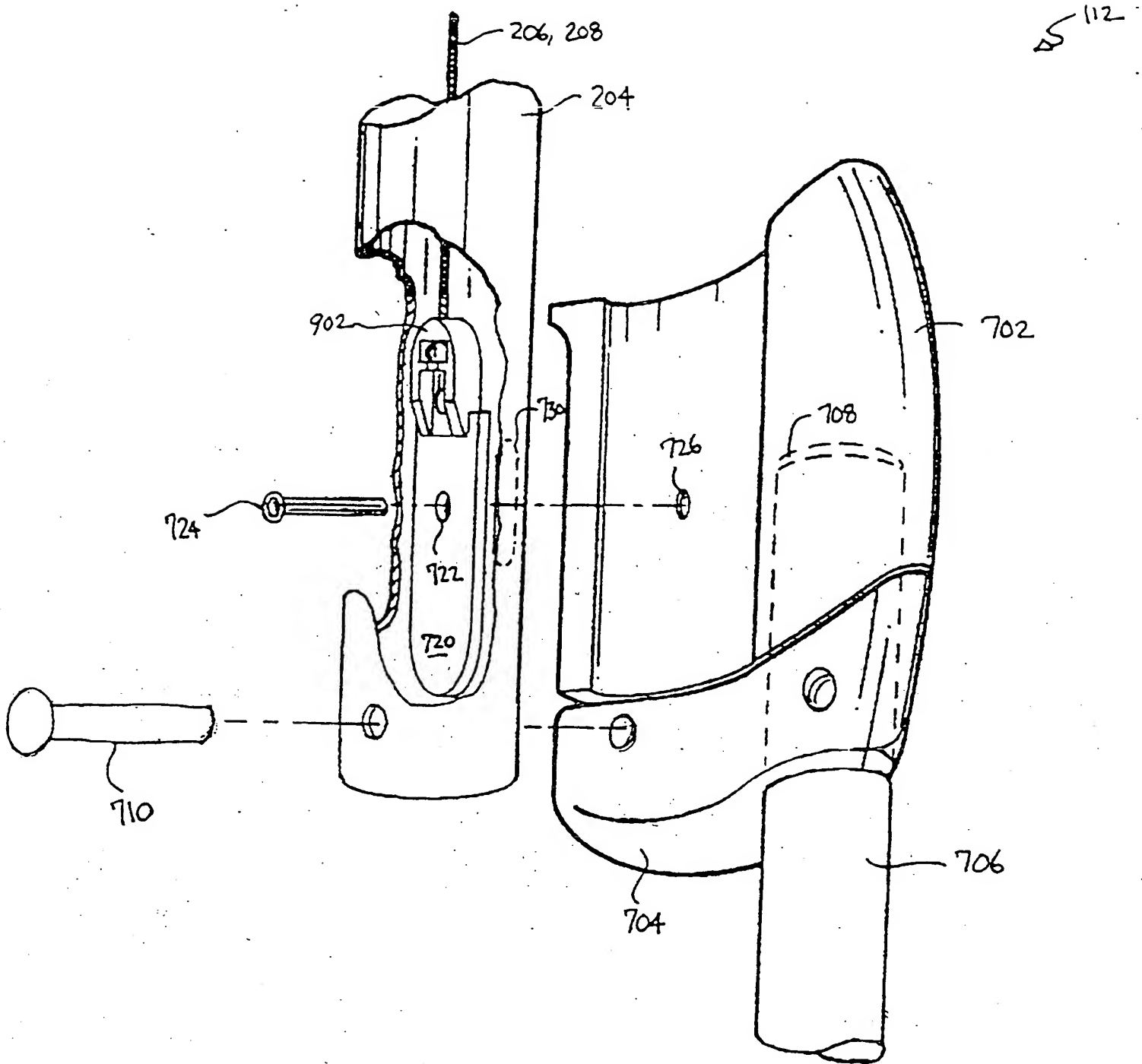


Fig. 7

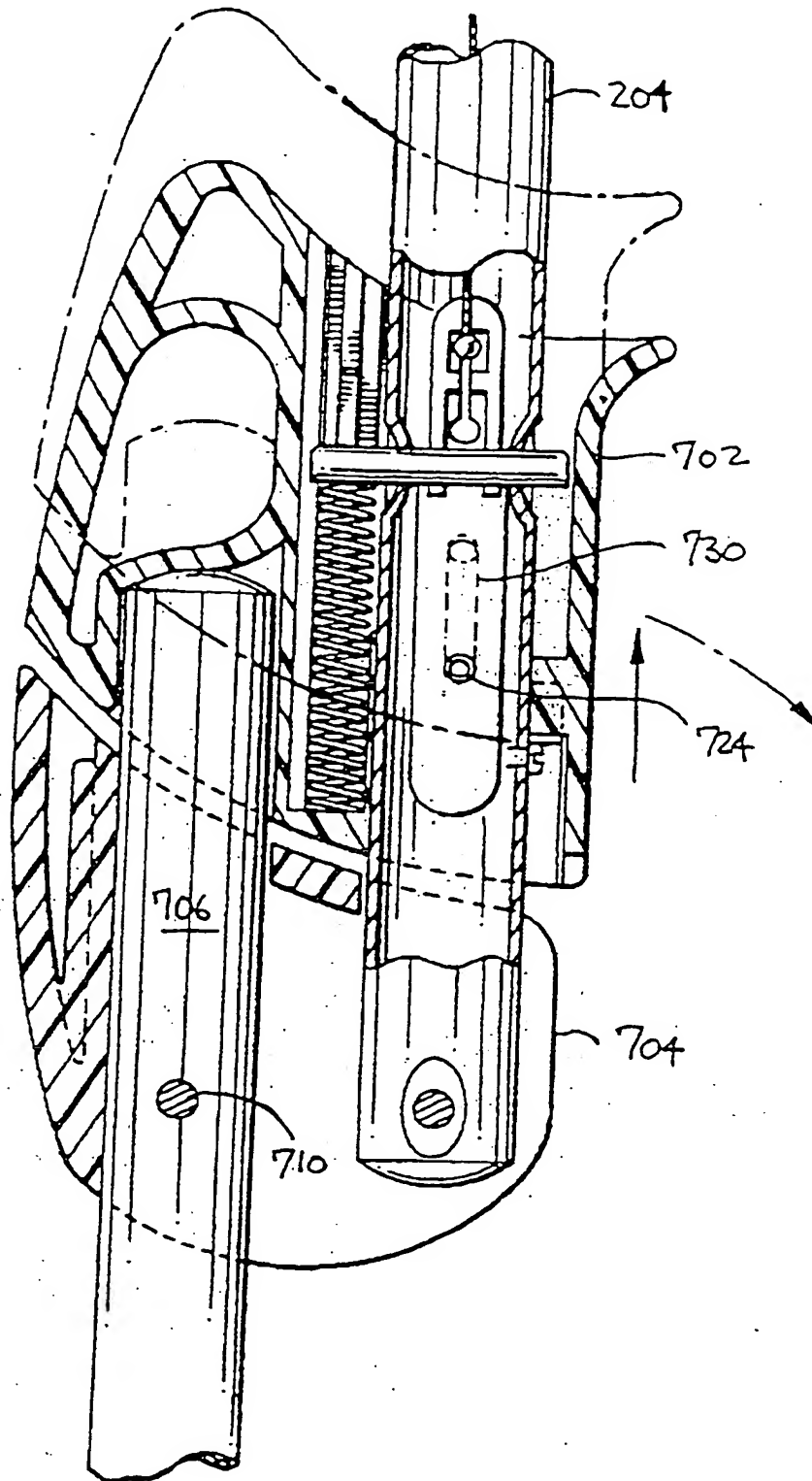
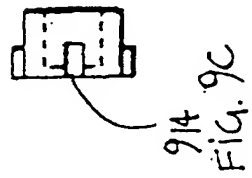
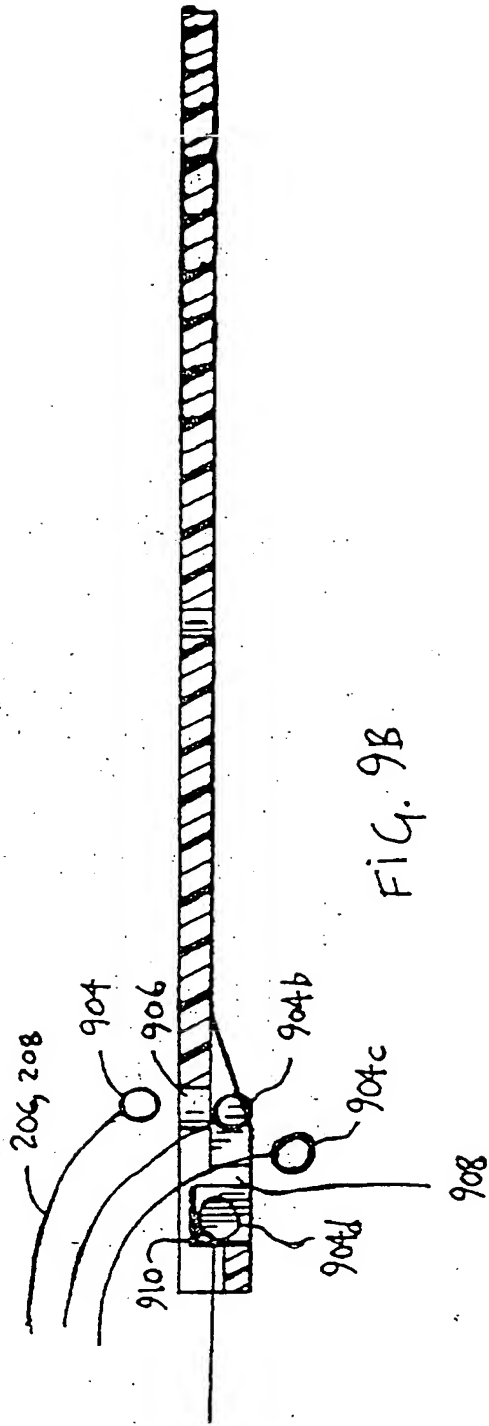
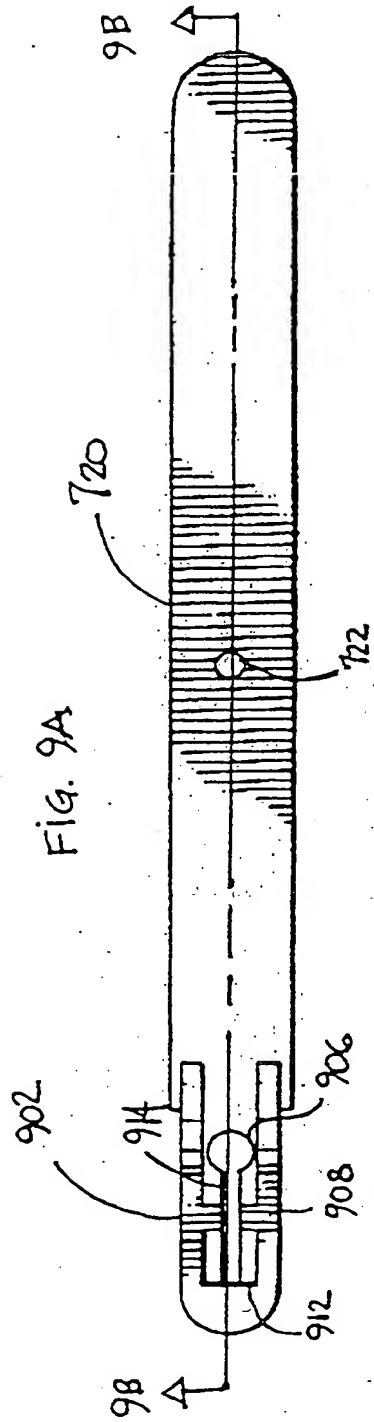
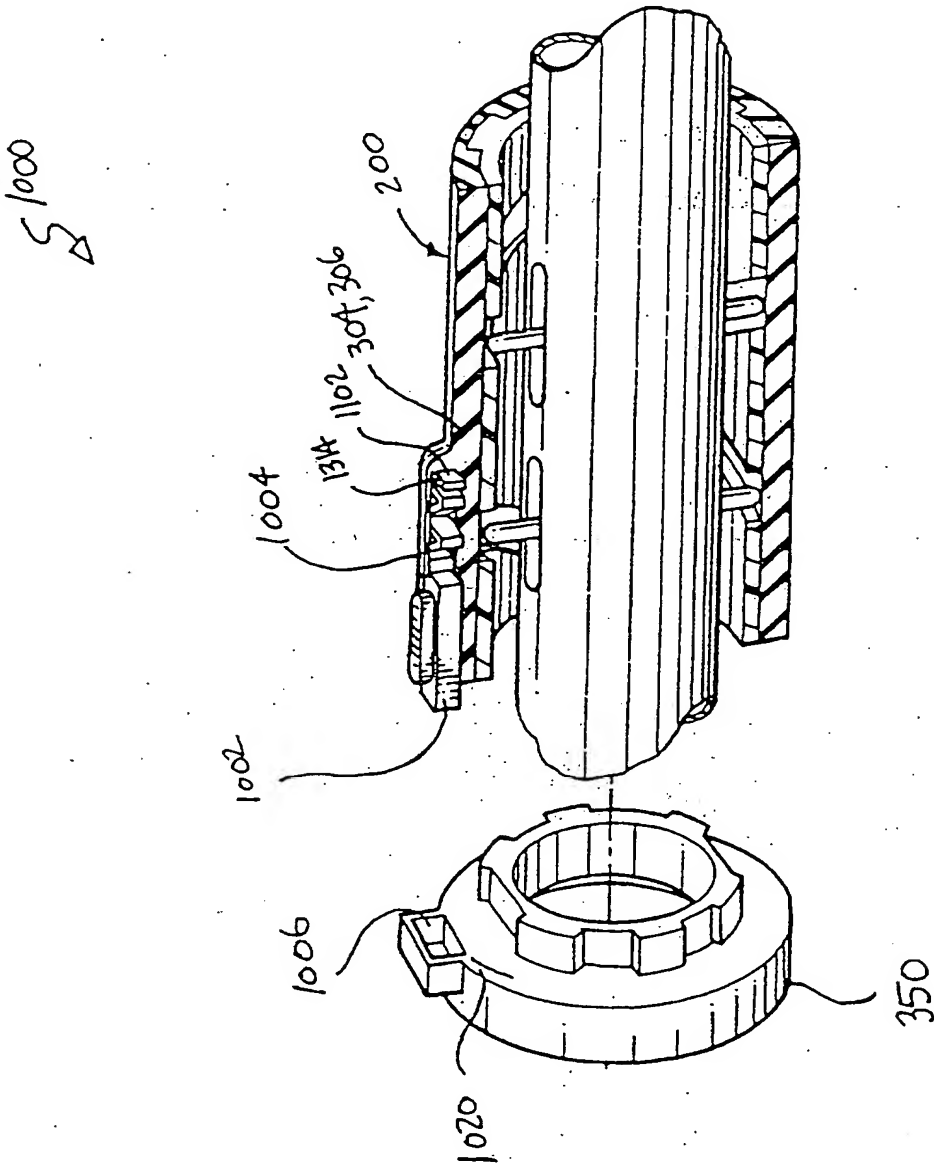


Fig. 8





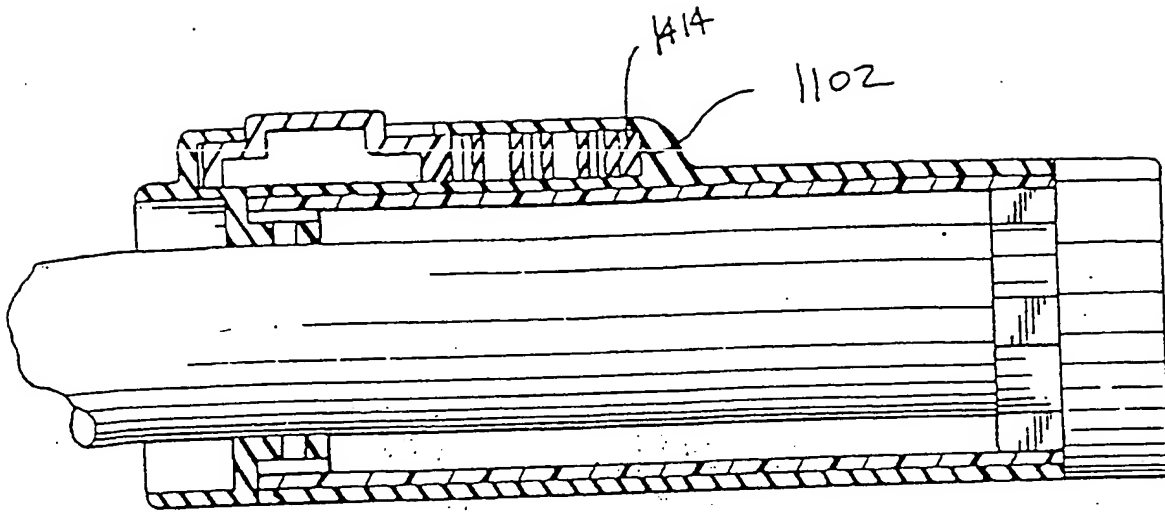


FIG. 11

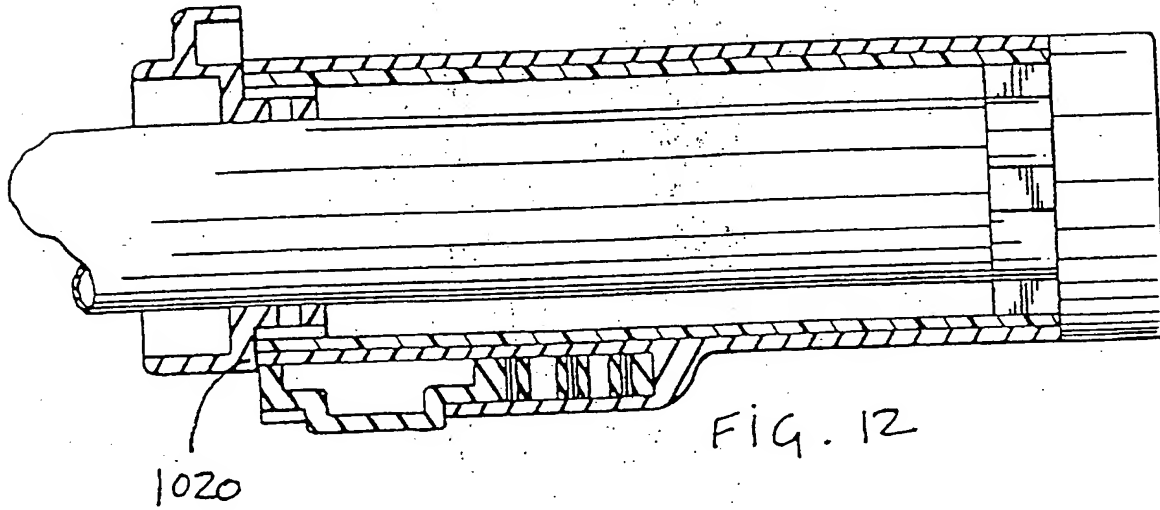


FIG. 12

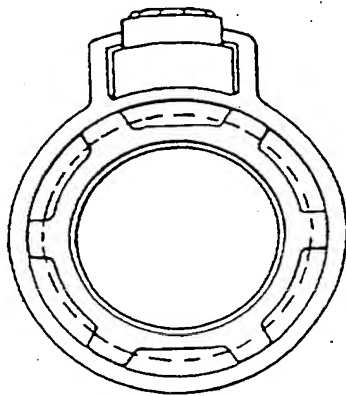


FIG. 13



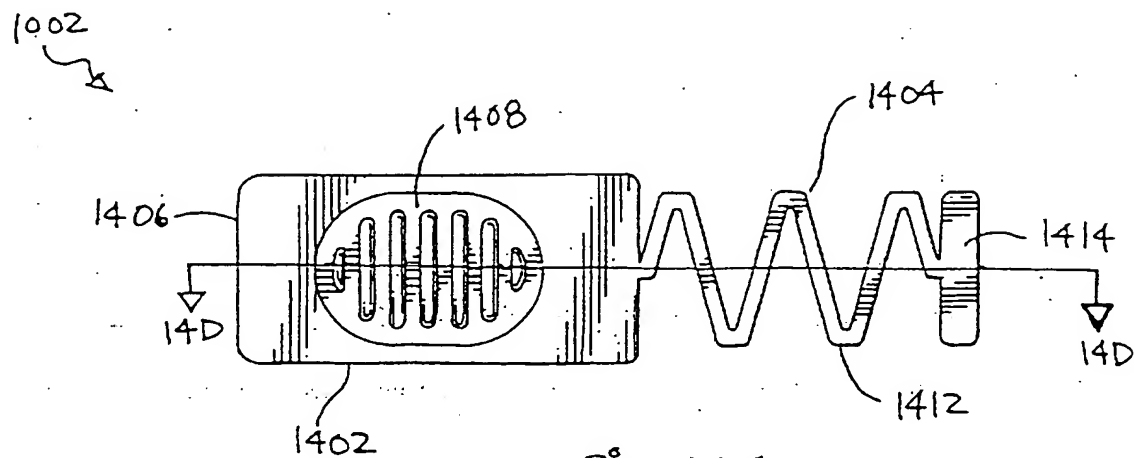


FIG. 14A

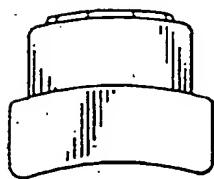


FIG. 14B

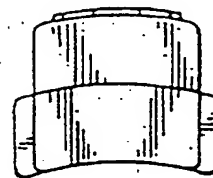


FIG. 14C

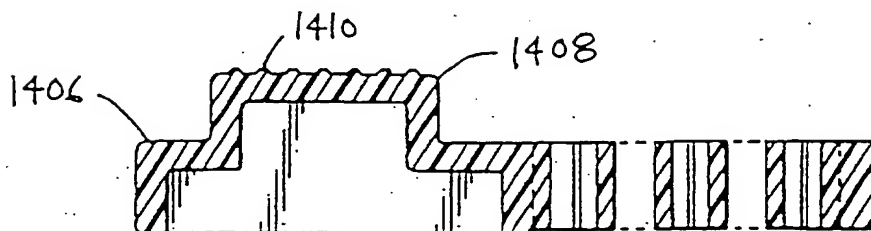


FIG. 14D

## STROLLER WITH ONE-HAND RELEASE LATCH

## BACKGROUND OF THE INVENTION

*1. Field of the Invention*

The following invention is directed to a stroller (otherwise known as a pushchair), and more particularly to a stroller which can collapse to a non-use position.

*2. Description of the Related Art*

Collapsible strollers are well-known in the art. However, the mechanism which allows the stroller to collapse is generally cumbersome and requires the use of both hands.

Strollers which can be folded by using one hand are also generally known. Cone, U.S. Patent No. 4,606,550, discloses a squeeze trigger type mechanism which is used to unlock the stroller and allow the stroller to collapse. Cone uses a release bar which extends across the length of the handlebar and is drawn toward the handlebar to unlock the stroller.

Nakao et al., U.S. Patent No. 4,832,361, uses a pair of levers located in the central part of the handlebar. These two levers are connected to cables threaded through the interior of the handlebars and attached to locks. The levers can be used to unlock the stroller and allow the stroller to collapse. It should be noted that Nakao et al. requires the use of both hands.

Kassai, U.S. Patent No. 4,846,494, uses an operating button that is connected to a pair of cables via a complicated mechanical linkage.

Cone et. al.; U.S. Patent 5, 257,799, is similar to Cone ('550) discussed above. The Cone ('799) also uses a release bar that is pulled toward the handlebar to unlock the stroller and allow the stroller to collapse.

5 Kato et. al., U.S. Patent, 5,205,579, discusses an operating mechanism for releasing the locking mechanisms of a collapsible stroller. The operating mechanisms of Kato is rotatable and the rotating motion is converted by a complicated mechanical linkage to linear motion.

10 The prior art suffers from a number of problems. The operating mechanisms with release bars are disadvantageous because items can get caught between the release bar and the handlebar and could possible pinch the operator or the passengers' fingers. Further, the mechanisms with release bars generally add weight to the stroller and are cumbersome and difficult to actuate. They also suffer from having exposed mechanical parts which are subject to wear and increased friction. The other mechanisms which use either levers, buttons, or a rotary member, all have a high  
15 degree of mechanical complexity and a large number of small parts. These factors tend to reduce reliability and increase the frequency of breakdown. There is currently a need for a stroller which can be folded with one hand, is mechanically reliable, and prevents inadvertent unlocking of the stroller.

## SUMMARY OF THE INVENTION

20 Accordingly, the present invention is directed to a stroller that substantially obviates one or more of the disadvantages of the related art strollers.

An object of the present invention is to provide a stroller that allows an operator to easily collapse the stroller.

Another object of the present invention is to provide a stroller that allows an operator to collapse the stroller using only one hand.

5 Yet another object of the present invention is to provide a stroller with a mechanism that allows easy collapse of the stroller.

It is a further object to provide a stroller to provide a mechanism to prevent the stroller from being inadvertently collapsed.

10 Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The objectives and other advantages of the invention will be realized and attained by the structure particularly pointed out in the written description and claims as well as the appended drawings.

15 To achieve these and other advantages and in accordance with the purposes of the present invention, as embodied and broadly described, the present invention includes a stroller with wheels and a passenger support portion comprising: a frame having a first extended configuration and a second collapsed configuration; and at least one latch member for allowing the stroller to collapse into the second collapsed configuration, a portion of the frame defining a handle portion including a moving member, the moving member connected to the at least one latch member to produce a  
20 force having sufficient energy to slidably release the at least one latch member.

The stroller can also include a moving member rotates about an axis generally parallel to the longitudinal axis of the handle.

The stroller can also include a moving member connected to a plate via a wire, the plate located proximate the latch and being rigidly related to a slidable catch, wherein the plate is located inside a tube and the slidable catch is located outside the tube, and wherein the plate and the slidable catch are connected by a mechanical fastener that extends through an elongate hole disposed on the tube.

In another aspect, the present invention is directed to a stroller with wheels and a passenger support portion comprising: a frame having a first extended configuration and a second collapsed configuration, and at least one latch member for allowing the stroller to collapse into the second collapsed configuration, a portion of the frame defining a handle portion including a generally cylindrical portion, the cylindrical portion defining a longitudinal axis and having a moving member generally rotatable about the longitudinal axis, the moving member comprising at least one groove, at least one pin associated with the groove, and operatively connected to the at least one latch member.

The stroller can also include a moving member is comprised of generally two half shells wherein each of the two half shells comprise at least one aligning mortise, and wherein each of the two half shells comprise at least one aligning tenon, and wherein each of the two half shells define an aperture adapted to receive a mechanical fastener, and wherein at least one of the half shells comprises a recess and a shoulder adapted to cooperate with a mechanical fastener.

In yet another aspect, the present invention is directed to a stroller with wheels and a passenger support portion comprising: a frame having a first extended configuration and a second collapsed configuration, and at least one latch member for allowing the stroller to collapse into the second collapsed configuration, a portion of the frame defining a handle portion including a generally cylindrical portion, the cylindrical portion defining a longitudinal axis and having a moving member being generally rotatable about the longitudinal axis, the moving member further including a resiliently biased locking member to prevent inadvertent rotation of the moving member.

The stroller can also include a locking member which includes a nose portion disposed on the moving member, the nose portion cooperating with a receiving member disposed on a stationary member, wherein the resilient bias is provided by a spring member integrally formed with a nose portion and wherein the locking member has a first locked position and a second unlocked position, a nose portion cooperating with a lip disposed on a stationary member when the locking member is in the second unlocked position, and wherein when the locking member is in the second unlocked position, the lip keeps the nose portion biased inward, and when the locking member is returned to the first locked position, the nose portion automatically engages a receiving member, and wherein when the locking member is integrally formed on the moving member.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

### BRIEF DESCRIPTION OF THE DRAWINGS

5 The accompanying drawings, which are included to provide a further understanding of the invention are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention. In the drawings:

10 Fig. 1 is a perspective view of a stroller in accordance with the present invention;

Fig. 2 is an enlarged view of a moving member in accordance with the present invention;

Fig. 3A is an exploded view of one embodiment of the moving member in accordance with the present invention;

15 Fig. 3B is an exploded view of another embodiment of the moving member in accordance with the present invention;

Fig. 3C is an exploded assembly view of the moving member in accordance with the present invention;

20 Fig. 3D is a cross-sectional assembly view of the moving member in accordance with the present invention;

Fig. 4 is a pre-assembly view of the moving member in accordance with the present invention;

Fig. 5 is a schematic view of a partially assembled moving member in accordance with the present invention;

Fig. 6 is an enlarged view of the joint between a wire and a pin in accordance with the present invention;

Fig. 7 is an exploded cut-away view of a plate and a locking device in accordance with the present invention;

Fig. 8 is a cross-sectional view of a locking device in accordance with the present invention;

Fig. 9A is a top view of a plate in accordance with the present invention;

Fig. 9B is a cross-sectional side view of a plate in accordance with the present invention;

Fig. 9C is an end view of a plate in accordance with the present invention;

Fig. 10 is an exploded cross-sectional view of the moving portion and a rotation lock in accordance with the present invention;

Fig. 11 is a schematic cross-sectional view of the moving member in a first locked position in accordance with the present invention;

Fig. 12 is a schematic cross-sectional view of the moving member in a second released position in accordance with the present invention;

Fig. 13 is a front view of the moving member in accordance with the present invention;

Fig. 14A is a top view of the projecting member in accordance with the present invention;



Fig. 14B is a front view of the projecting member in accordance with the present invention;

Fig. 14C is a rear view of the projecting member in accordance with the present invention; and

5 Fig. 14D is a cross-sectional view of the projecting member in accordance with the present invention

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

10 The present invention relates to a stroller, and more particularly to a collapsible stroller with an improved mechanism for folding the stroller. Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

15 Fig. 1 shows a preferred embodiment of a stroller 100 in accordance with the present invention. The stroller generally comprises a frame 102 having a handle portion 104. The handle portion also includes a gripping portion 106. The stroller includes a passenger support 108 that is used to hold a child and a suitable number of wheels 110 to allow easy transport. The preferred stroller 100 also includes at least one locking device 112 (e.g., a latch). This locking device allows the stroller to  
20 collapse from an extended position as shown in Figure 1 to a collapsed position. The specific structural details of the stroller and the associated elements which allow the stroller to collapse are discussed in the assignee's prior patent, U.S. Patent No.

5,454,584, which is incorporated by reference. This improved stroller includes moving member 114 which actuates at least one of the locking devices 112 and thereby allows for the one-handed operation and folding of the preferred stroller.

Figure 2 shows an enlarged view of the moving member 114. The preferred moving member comprises a moving portion 200 and a lock portion 202. The preferred moving member 114 is mounted on a tube 204. Preferably, the moving member is mounted at a central location along handle 104 (see Fig. 1). Wires 206 and 208 extend through the tube and to the moving portion 200.

Figures 3A and 3B show an exploded view of two embodiments of moving member 114. The first embodiment, shown in Figure 3A has two half shells, a first half shell 302 and a second half shell generally designated 320. The half shells are structurally similar and are mirror image halves of each other except for the grooves which will be discussed later. Given that the two half shells are structurally similar only the first half shell will be discussed in detail.

The first half shell 302 includes an outer member 304 and an inner member 306. The outer member 304 provides a grasping surface for an operator. The inner and outer members are joined by any convenient method. However, the instant invention prefers the use of splines 308. The splines 308 can be straight splines or they can be dove-tailed. Straight splines are preferred. The splines help to rigidly relate the inner and outer members 304, 306, respectively, and the splines 308 also prevent the outer member 304 and the inner member 306 from slipping circumferentially with respect to each other.

The inner member includes grooves 310 and 312. These grooves 310 and 312 cooperate with respective pins 330 and 332. The pins are joined to wires 208 and 206. The lower portions of pins 330 and 332 are received in cooperating slots 322 and 324 disposed on the second half shell member. The grooves 310 and 322 cooperate with pin 330, and grooves 312 and 324 cooperate with pin 332.

Considering the first set of grooves 310 and 322, the grooves 310 and 322 are constructed in a way that allows the two grooves to move pin 330 axially along the length of the tube when the grooves are rotated. Pin 330 protrudes out of slot 340 cut into the tube. There is another slot similar to 340 disposed on the bottom side of the tube which is not shown in the tubes. As the moving member 114 is rotated by an operator, the rotation of the moving member causes the grooves 310 and 322 to slide pin 330 axially along the length of the shaft. In other words, the goal of the moving member 114 is to convert rotational motion into linear axial motion. When the pin 330 moves along the axial length of tube 204, pin 330 pulls wire 208 along with it. The motion and force of the wire is then used to release the latch.

In a similar manner grooves 312 and 324 cooperate with pin 332 to slide pin 332 along slot 342 when the moving member is rotated.

The second embodiment, shown in Figure 3B uses a one-piece construction. The first half shell 360 and the second half shell 362 are formed of a single monolithic piece of material. In all other respects, besides the configuration of the half shells, the preferred second embodiment is structurally identical to the first embodiment.

Another feature of the present invention are the end caps 350 and 352, shown in Figure 3A and 3B. The end caps 350 and 352 are riveted to tube 204. The end caps provide a suitable number of apertures 366 (see Figure 3B) for the rivets (not shown).

5 Each of the end caps 350 and 352 have extensions 370. The extensions are adjacent to the inner surface of the half shelves 360 and 362 and half shelves 302 and 320 shown in Fig. 3A. The extensions include pockets or scallops 372 which are used to hold dirt and other debris. These scallops by holding dirt and debris reduce damage to the other members of the moving member.

10 Figures 3C and 3D show how the two half shells 302, 320 or 360 and 362, are assembled. Figure 3C shows a perspective view from underneath the handle of the moving member 114 and Figure 3D shows a cross-section. As shown in Figures 3C and 3D. The moving member 114 generally includes two half shells which are cut axially. The half shells are generally semi-cylindrical members. The joint between the two half shells 302, 360 and 320, 362, includes an aligning mortise 374 which fits  
15 into an aligning tenon 376. As shown in Figure 3D there is one mortise and tenon set on each side of the half shell joints. In the preferred embodiment, the first half shell, 302, 360 has a tenon on one side and a mortise on the other side, while the second half shell 320, 362 has a mortise on one side and a tenon on the other. As shown there  
20 constructed in the manner shown in 3D with tenon aligning with respective mortise. The half shells can be attached with just this mortise and tenon joint and an adhesive.

To further support the joint, the use of a mechanical fastener, for example a screw, is preferred. The second half shell 320, 362 has a number of recesses 378.

These recesses prevent the screws 384 from protruding out of the outer surface of the moving member 114. The recesses also include a shoulder 379 which allow the heads of the screws to bear against the second half shell and form a solid joint. The second half shell 320, 362 includes a suitable number of apertures 380. Aligned with these apertures 380 are a series of blind holes 382. Preferably, the apertures in the blind holes are not threaded and self-taping screws 384 are used. Any number of mechanical fasteners can be used. However, the exemplary embodiment shown in Figures 3C and 3D use four threaded fasteners. The assembly could use just the mortise and tenon joint, or just the threaded fasteners or screws 384, or the assembly could use a combination of both aligning mortises and tenon joint and a mechanical fastener. The exemplary embodiment, shown in Figures 3C and 3D, uses the combination of the threaded fastener and the mortise and tenon joint.

Figure 4 shows moving member 114 prior to assembly. The specific cam profiles of the grooves 310, 312, 322, and 324 can be seen in this figure. While any cam profile can be used for the shape of the grooves, the preferred embodiment has a cam profile that generally runs linearly along the circumference of the inner member. In other words, if the inner member were to be laid flat, the shape of the grooves would be straight diagonal lines.

Figure 5 shows a partially assembled view of the device and clearly shows the protrusions of pins 330 and 332 out of slots 340 and 342. Figure 5 also shows the engagement of the grooves 310, 312, 322, and 324 with pins 330 and 332.

Figure 6 shows the details of the connection between wires 208 and 206 and pins 330 and 332. It is preferred that the connection between the two wires and the two pins are identical. Wire 208 and 206 are threaded through a suitable hole 600 which is bored through pins 330 and 332. The wire is then attached to a sphere 602. The sphere 602 functions like a cotter pin insure that the pins 330 and 332 do not extend beyond the end of the wire 206 and 208. The system is generally in a state of tension and the pins 330 and 332 are generally used to drag the wire 206 and 208 using sphere 602.

Figures 7 and 8 show the details of the other end of the wires 206 and 208. Figure 7 is an exploded, cut-away view of locking device 112. This view shows the assembly which is near the locking device 112 and more particularly, this view shows slidable catch 702 and body 704. Also shown in the Figure, wire 206 or 208 is attached to a plate 720.

The preferred locking device 112 is similar to the one disclosed in U.S. Patent Number 5,454,584 which was previously incorporated by reference. The preferred locking device comprises a slidable catch 702 that works in cooperation with a body 704. A forward tube 706 or first leg is rigidly attached to the body 704. The forward tube 706 protrudes beyond the body and extends into the slidable catch 702. The slidable catch has an aperture 708 to receive the protruding end of forward tube 706.

When the slidable catch 702 is moved upwards as shown in Figure 7, the slidable catch clears the protruding end of forward tube 706. When the slidable catch clears the protruding end of the forward tube 706, tube 204 can pivot with respect to tube 706 about hinge 710. This facilitates collapsing of the stroller.

5 As discussed above, one end of the wire is attached to one of the pins 330 or 332. The opposite end of the wire 206 or 208 is attached to a plate 720. This plate 720, as well as the wire 206 and 208 are all disposed within tube 204.

The upper portion of plate 720 includes a wire retention portion 902 that will be discussed in greater detail below. The plate 720 also includes an aperture 722.

10 The aperture 722 is designed to receive a rivet 724 which extends through an elongate slot 730 cut into tube 204. The rivet 724 then connects to the slidable catch 702 via an aperture 726 formed on the slidable catch 702.

This assembly rigidly relates the plate 720, which is disposed on the interior of tube 204, with the slidable catch 702 which is disposed exterior to tube 204. The elongate slot 730 allows plate 720 and slidable catch 702 to slide vertically (as shown in Figures 7 and 8) with respect to tube 204. Figure 8 shows the sliding action. The released position is shown in phantom in Figure 8.

15 Figures 9A - 9C show three views of plate 720. The plate 720 has a wire receiving portion 902. The wire receiving portion 902 is designed to hold the end of a wire which terminates in a sphere 904. The wire receiving portion 902 has an aperture 906 that sphere 904 enters. After the sphere 904 passes through the aperture 906, the sphere 904 assumes a position 904b. Then the sphere 904 is drawn over

ridge 908. This position is shown as 904c. Finally, the sphere 904 enters pocket 910. This position of the sphere is shown as 904d. The sphere is bounded by a front wall 912 and ridge 908. During this entire process, the wire 206, 208 extends through slot 914. See Figures 3C and 3A.

5           Figures 10-12 generally show a device that locks the moving portion 200 in place and requires operator intervention to move the moving portion 200. For convenience in discussing this device, it is referred to as a rotation lock 900. The rotation lock 900 helps to prevent inadvertent twisting of the moving portion 200, thereby preventing inadvertent release of the sliding catches 702 (see Figure 7) and  
10           finally preventing inadvertent folding of the stroller 100. The use of the rotation lock 1000 is preferred, but it is also optional.

          The preferred rotation lock 1000 includes a projecting member 1002 housed in a bulge 1004. The bulge is preferably formed on one of the outer members 304 of the moving member 200. In a first position, the projecting member 1002 cooperates  
15           with a receiving member 1006. The receiving member is preferably formed integral with one of the end caps 350 or 252. For purposes of simplifying this disclosure, the receiving member is shown in the left end cap 350. It should be understood that when the projecting member 1002 is in the first position, the projecting member 1002 enters  
20           the receiving member 1006, the preferred projecting member 1002 generally prevents the moving member 200 from releasing the slidable catch 702 (see Figure 7) and thus preventing the stroller from collapsing.



In the preferred embodiment, the projecting member 1002 is mounted on the moving member 200 and slides axially to enter the receiving member 1006 which is mounted on end cap 350. Since end cap 350 cannot rotate, when the projecting member 1002 is in a first position, the projecting member 1002 prevents the moving member 200 from rotating. This first position is shown in Figure 11.

The preferred projecting member 1002 is shown in detail in Figures 14A-14D. The projecting member 1002 has an engaging end 1402 and a resilient end 1404.

The engaging end 1402 has a nose portion 1406 that enters the receiving member 1006 (see Figure 10). The engaging end 1402 also has a raised finger land 1408. The finger land 1408 can have grooves, bumps, contours or any other irregularity to improve gripping by an operators finger. The preferred finger land 1408 has a series of bumps 1410 that improve grip.

The resilient end 1404 of the projecting member 1002 includes an integral spring 1412. The preferred spring 1412 is made integral with the engaging end 1402. The preferred spring 1412 is also made of the same material as the engaging end 1402. This allows both the engaging end and the resilient end 1404 which contains spring 1412 to be constructed as one homogenous and monolithic member. This reduces the number of parts and thus, reduces the cost of manufacturing the projecting member.

Spring 1412 is preferably constructed of a zig-zag configuration. The preferred spring 1412 has linear portions which are angled connected by angled joints. The resilient end 1404 and spring 1412 provide a resilient or spring bias to the

engaging end 1402. The other end of spring 1402 includes a flat foot 1414. As shown in Figures 10 and 11, foot 1414 presses against a blind end 1102 of bulge 1004.

5 This assembly provides a spring bias for the engaging end 1402 of the projecting member 1002. As shown in Figure 10, the spring bias tends to move the engaging end 1402 of projecting member 1002 away from the blind end 1102. In other words, the spring bias of the projecting member 1002 tends to bias the engaging end 1402 outward and toward the receiving member 1006.

10 When the user wishes to disengage rotation lock 1000, the operator simply moves the projecting member 1002 out of engagement with the receiving member 1006. The operator accomplishes this by sliding the engaging end 1402 of projecting member 1002 against the spring bias and toward blind end 1102. When the projecting member 1002 has cleared the receiving member 1006, the moving portion 200 is then free to move.

15 In the preferred embodiment, the moving portion 200 can then rotate and operate the locking devices 112 (see Figure 1) as disclosed above. When the moving portion 200 is rotated the rotation lock 1000 assumes a second position shown in Figure 12. Figure 12 is an exaggerated schematic drawing that shows the moving portion about 180° from the locked position shown in Figure 10. This is done for clarity. The invention prefers a maximum unlocked position, dictated by the  
20 circumferential extent of grooves 310, 312, 322, and 324 (shown in Figures 3A and 3B), to be less than 180° from the locked position.

An additional feature of the present invention relates to the design of the end cap 350 and lip 1020 (see Figure 10). When the moving portion assumes a second position in which projecting member 1002 is not in alignment with receiving member 1006, the preferred embodiment includes a lip 1020 shown in Figures 10 and 12.

5 This lip 1020 prevents the projecting member 1002 from sliding back out. Lip 1002 keeps the projecting member 1002 in its compressed state, as shown in Figure 12.

Projecting member 1002 essentially hangs on lip 1020. When the moving portion 200 is rotated back and projecting member 1002 aligns with receiving member 1006, the projecting member will then snap back into the receiving member 1006 because previously, the projecting member 1002 was hung up on lip 1020.

10 This feature of including a lip 1020 allows the projecting member 1002 to automatically snap back into the receiving member 1006. In other words, when the moving portion 200 is returning from the second position to the first locked position, the operator does not have to slide engaging end 1402 against the spring bias and hunt for the receiving member 1006 because of lip 1020, the projecting member will automatically snap back into the receiving member 1006 and the device will again assume the locked first position.

15 Any of the features of the invention disclosed can be used separately, or the features of the present invention can be combined and used together.

20 It will be apparent to those skilled in the art that various modifications and variations can be made in the child walker of the present invention without departing from the spirit or scope of the invention. Thus, it is intended that the present

invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

## CLAIMS

1. A stroller with wheels and a passenger support portion comprising:

a frame having a first extended configuration and a second collapsed configuration; and

at least one latch member for allowing the stroller to collapse into the second collapsed configuration, a portion of the frame defining a handle portion including a moving member, the moving member connected to the at least one latch member to produce a force having sufficient energy to slidably release the at least one latch member.

2. The stroller according to claim 1 wherein the moving member rotates about an axis generally parallel to the longitudinal axis of the handle.

3. The stroller according to claim 1 wherein the moving member further comprises a groove.

4. The stroller according to claim 1 wherein the moving member further comprises a groove and a pin cooperates with the groove.

5. The stroller according to claim 1 wherein the moving member is connected to a plate via a wire, the plate located proximate the latch and being rigidly related to a slidable catch.
6. The stroller according to claim 5 wherein the plate is located inside a tube and the slidable catch is located outside the tube.
7. The stroller according to claim 7 wherein the plate and the slidable catch are connected by a mechanical fastener that extends through an elongate hole disposed on the tube.
8. A stroller with wheels and a passenger support portion comprising:
  - a frame having a first extended configuration and a second collapsed configuration, and
  - at least one latch member for allowing the stroller to collapse into the second collapsed configuration, a portion of the frame defining a handle portion including a generally cylindrical portion, the cylindrical portion defining a longitudinal axis and having a moving member generally rotatable about the longitudinal axis, the moving member comprising at least one groove, at least one pin associated with the groove, and operatively connected to the at least one latch member.

9. The stroller according to claim 8 wherein the moving member is comprised of generally two half shells.
10. The stroller according to claim 9 wherein each of the two half shells comprise at least one aligning mortise.
11. The stroller according to claim 9 wherein each of the two half shells comprise at least one aligning tenon.
12. The stroller according to claim 9 wherein each of the two half shells define an aperture adapted to receive a mechanical fastener.
13. The stroller according to claim 9 wherein at least one of the half shells comprises a recess and a shoulder adapted to cooperate with a mechanical fastener.
14. A stroller with wheels and a passenger support portion comprising:  
a frame having a first extended configuration and a second collapsed configuration, and  
at least one latch member for allowing the stroller to collapse into the second collapsed configuration, a portion of the frame defining a handle portion including a generally cylindrical portion, the cylindrical portion defining a longitudinal axis and having a moving member being generally rotatable about the longitudinal axis, the

moving member further including a resiliently biased locking member to prevent inadvertent rotation of the moving member.

15. The stroller according to claim 14 wherein the locking member includes a nose portion disposed on the moving member, the nose portion cooperating with a receiving member disposed on a stationary member.

16. The stroller according to claim 14 wherein the resilient bias is provided by a spring member integrally formed with a nose portion.

17. The stroller according to claim 14 wherein the locking member has a first locked position and a second unlocked position, a nose portion cooperating with a lip disposed on a stationary member when the locking member is in the second unlocked position.

18. The stroller according to claim 14 wherein, when the locking member is in the second unlocked position, the lip keeps the nose portion biased inward, and when the locking member is returned to the first locked position, the nose portion automatically engages a receiving member.

19. The stroller according to claim 14 wherein, when the locking member is integrally formed on the moving member.



20. A stroller substantially as described herein with reference to and as illustrated in the accompanying drawings.



Application No: GB 9814637.6  
Claims searched: 1-13

Examiner: Gary Williams  
Date of search: 21 January 1999

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.Q): B7B: BTF1; E2A: AMXY

Int CI (Ed.6): B62B: 7/06,7/08

Other: Online: EDOC,WPI

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
X	US 5205579 (COMBI) See Fig.5A, col.5 line 7 - col.6 line 5	1-4,8,9
X	US 4832361 (COMBI) See Figs.3b,4, col.7 lines 31-53	1

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.